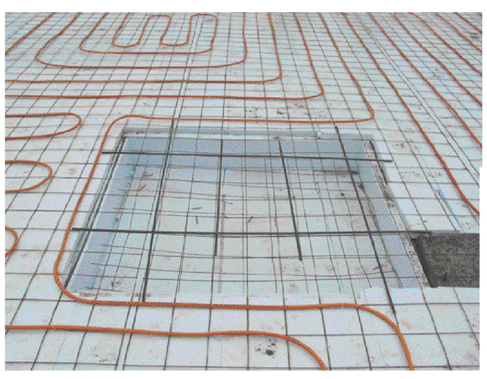
Hunter House was designed holistically to ensure that placement on the site, window-orientation, thermal mass, and innovative mechanical and electrical systems would work together most effectively.

1



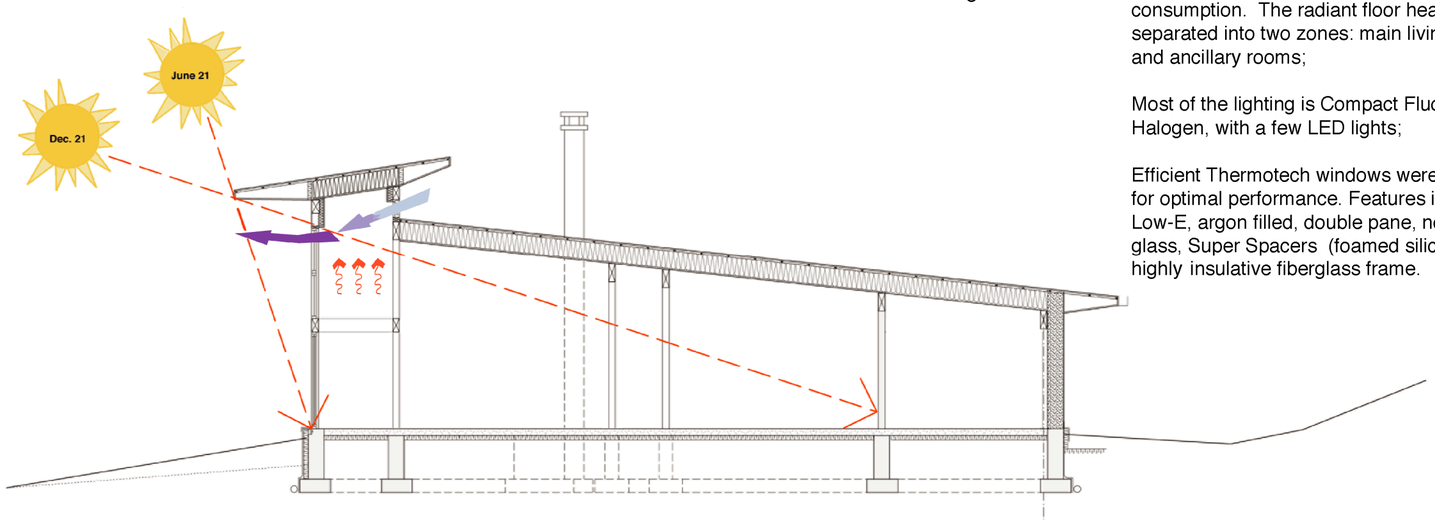
2

3

1. Hybrid photovoltaic (PV)/wind energy system:
- 8 BP Solar BP-85 LGBG (Laser Grooved, Buried Grid) PV modules totaling 510W
- 1 South West Wind Power H80 wind turbine, 11' blade span, max output 1000W
- 8 Surrette 'Big Red' batteries, 6V 1000Ah each
- Xantrex control equipment including SW4048 sinewave inverter
- system monitor: Trimetric meter System receives charge from the PV modules, the wind generator, and a backup gasoline generator. Energy is stored in the batteries and converted to household voltage levels on demand by the inverter.

2. Solar Water Heating System
- Solcan 64-80DB including 64sq feet of collection and a stainless steel storage tank with internal heat exchanger. The SHW system contributes to both domestic hot water (for showers, drinking, etc.) and to the radiant in floor heating system. It works in conjunction with a propane fired boiler. A wood burning stove will be installed in future.

6



LONG SECTION Sun angles Latitude 44°17' N Longitude 78°38' W 7

4

5

1. and 2. Sustainable Energy sources include: PV panels and wind turbines for electricity and solar panels for hot water, including radiant in-floor heating. 3. Exterior walls are constructed of affordable and environmentally-responsible strawbales, an agricultural waste product.
4. and 5. Efficient Thermotech windows were installed for optimal performance on the South facade.
6. The strawbale's plaster finish serves as the interior and exterior finish. 7. Passive solar design, includes a south facing, thermally glazed, top-vented gallery, shaded to reduce summertime solar heat gain.

HUNTER HOUSE is a contemporary post & beam passive solar home.

Owner Glen Hunter says "A lot of off-grid and environmentally friendly houses are very traditional in design, but we didn't want that; we wanted to go very modern, very progressive.

This house uses the latest technology to transform natural elements into power, and some very basic, common-sense planning and material choices to hold onto that energy once we've got it."

SUSTAINABLE FEATURES

- Reduced Building Area:
  The house was designed as a multi-functional open plan space with a structural grid overlay. The family plans to adapt the space over time with shelving units and partitions according to their changing needs.

- Sustainable Landscaping:
  The landscaping is minimal and indigenous to the site.

- Recycled and Renewable Materials:
  The structural columns are engineered parallel strand timbers with non-load bearing strawbale walls. Interior finish wood was harvested on-site;

  A durable, solar reflective and 100% recyclable Galvalume metal roof was installed. The roof was insulated with Roxul mineral wool insulation, manufactured from mineral slag, an industrial waste product.

- Natural Ventilation + Daylighting:
  The South glazed wall was designed with sliding doors low and operable windows high to create a natural stack ventilation system. The open-concept and glazed south wall and overhangs were designed to provide minimal solar heat gain in the summer and the optimal amount in winter.

- Waste Reduction, and Elimination:
  Modular systems and an efficient structural concept reduced construction waste; using furnishes such as high book shelves and strategic spatial planning of the kitchen/ bathroom core, reduced the requirement of interior partitions. The shell, strawbale walls finished with plaster, serves as the interior and exterior finish, and the concrete floor remains exposed.

- Innovative Design + Energy Efficiency:
  Hunter house is 100% off-grid. i.e. it is not connected to electric grid, water, sewer or gas mains.

  A Load Analysis for solar collectors and wind generator was prepared by Generation Solar.

  Hybrid photovoltaic (PV)/wind energy system;

  Solar Water Heating System;

  All systems have automatic controls to regulate consumption. The radiant floor heating is separated into two zones: main living space and ancillary rooms;

  Most of the lighting is Compact Fluorescent or Halogen, with a few LED lights;

  Efficient Thermotech windows were installed for optimal performance. Features include: Low-E, argon filled, double pane, non-glare glass, Super Spacers (foamed silicon), and a highly insulative fiberglass frame.

Hunter House

Passive Solar, Off-Grid, Strawbale House Ontario

Status: Completed Spring 2003

Key People: Paul Dowsett
Project Architect

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